

# Analyzing Students' Critical Thinking Pattern in Writing Argumentative Paragraph Based on Stephen Toulmin Theory

<sup>1</sup>Ika Sastrawati, <sup>2</sup>Uyunnasirah Hambali, <sup>3</sup>Andi Bulkis Maghfirah Mannong, <sup>4</sup>Haslinda Bachtiar

<sup>1, 2, 3, 4</sup>Universitas Muhammadiyah Makassar, Indonesia

## Abstract

This study aims to examine students' critical thinking patterns in writing argumentative paragraphs using the argumentative patterns developed by Stephen Toulmin. This study used qualitative approach. To collect the data, the instrument used was students' writing on the Academic Writing class. Hence, the third semester students were involved as the participants. Then, the collected data were analyzed focusing on the Stephen Toulmin Theory which divides the argument into six stages; claim, ground, warrant, backing, qualifier, and rebuttal. The result of this study revealed that by focusing on Stephen Toulmin's argumentative theory, students could hone their ability to think critically. This is because the elements on Stephen Toulmin's theory were proved to strengthen students' writing.

## Keywords

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writing  
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## Corresponding Email

Ika Sastrawati

[ikasastrawati@unismuh.ac.id](mailto:ikasastrawati@unismuh.ac.id)

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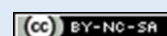
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## Introduction

In the 21<sup>st</sup> Century, it is obvious that students are led to have good critical thinking. [Kulsum and Nugroho](#) (2014) state that the students are demanded to have the ability to think critically, solve problems, collaborate, and communicate. This thinking process is an activity to find out correct knowledge as explained by [Suriasumantri](#) (2005). Not only to be believed personally but also the truth that can be accepted by other learners. [Dewey in Nejmaoui](#) (2019) defined critical thinking as an active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it ends. [Ratnasari, et al](#) (2020) emphasized that critical thinking is the mindset of individuals or students through reasoning activities, scientific methods, analyzing problems, gathering information, expressing hypotheses, and making conclusions. [Marin and Halpern in Sadeghi, et al](#) (2020) explained that the development of critical thinking skills is often considered as the most significant reason for formal education because the ability to think critically is essential for success in the contemporary world where the rate of new knowledge creation is rapidly accelerating.

Writing is one way to express what we think, what is in our mind in the form of words to become something meaningful. [Hedge in Atayeva](#) (2019) defined that writing is the production of communication, linking ideas, and information development, or giving arguments to a particular reader or a group of readers. Writing is thinking process and need much time which is different from learning other skills ([Widayanti](#), 2019). The form of critical thinking can be found in the argumentative paragraphs written by students as a catalyst for the development of science.

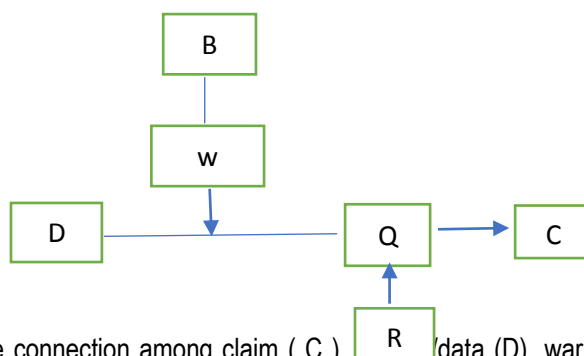
One of the components of critical thinking is argumentation. This is because every individual in professional and non-professional activities undeniably requires arguments in their daily interaction both spoken and written. The arguments also have an important role in the development of science. In science, it is not limited to presenting facts but also arguments about phenomena ([Pritasari, et al](#), 2016). Related to this, [Erduran et. al](#) (2006) states that scientists use argumentation to support theories, models, and explain natural facts. More specifically, argumentation involves statement of an issue, discussion of its pros and/or cons, and justification of support for one with the primary focus on the reader ([Kinneavy in Nimehchisalem](#), 2011).

Furthermore, in education context, [Luna, et. all](#) (2020) explain that students at all educational levels need to be able to argue taking into account the different positions relating to a topic and it can be more effective if the students are asked to write argumentative texts based on different sources so called hybrid task. This hybrid task is very complex and it has a strong potential effect for learning. [Toulmin in Mazinani](#) (2019) believe that a good argument can succeed in providing good justification to a claim, which will stand up to criticism and earn a favorable verdict. Moreover, [Goldman](#) (1994) divided two kinds of conception about good argument: (1) first, an argument is good in a weak sense if the conclusion either follows deductively from the premises or receives strong evidential support from them. (2) An argument is good in a strong sense, if in addition to this, it has only true premises. Thus, in a strong sense, the paradigm of a good argument is a sound argument.

An argumentation theory was proposed and coined by a philosopher Stephen Toulmin. He proposed the way to convey our argumentation into six elements. [Magalhaes](#) (2020) mentions the sixth elements of Toulmin's argumentative theory, namely: (1) claim is a statement or opinion which supports, denies or ask for something usually called as a thesis. An argument that should be proven, (2) ground contains facts or data which in line with the conclusion and it can consist of motives, evidence, proof, circumstances, and reasons that support the conclusion (3) warrant is a statement with implicit logic, often hypothetical, linking claims and grounds, (4) backing is statements that limit argument strength or that propose conditions for the argument to be true. This is usually not subject to questioning, (5) qualifier: is an indication of conclusion strength, usually done through words like necessarily or possibly and it provides its strength or limitations. (6) The last one is rebuttal which is a counter-arguments or statements indicating circumstances when the general argument is not true. To be

more detailed, [Gomez \(2018\)](#) illustrates the relationship between each element of argumentative paragraph based on the theory of Stephen Toulmin in the following figure 1.

Figure 1. Elements of Argumentative Paragraph



The figures illustrated that the connection among claim ( C ), data ( D ), warrant ( W ) and backing ( B ) give an argument its solidity, while the presence of qualifiers ( Q ) and rebuttal ( R ) demonstrated the strength of the interconnections among these elements.

Many researchers have focused their research on analyzing students' writing especially on tertiary level of education. [Ningsih \(2015\)](#) examined the writing errors of the argument paragraphs of students from non-English journals. His research found that in terms of the aspects of writing a good argumentation paragraph, the analysis of content, organization, and vocabulary aspect was good. In (2016), [Nurmahani](#) investigated metacognition strategies and critical thinking in writing arguments for students majoring in PGSD. The results of his research concluded that most students found it difficult to develop their introduction, they were unable to present facts, the systematics of the ideas put forward were still jumping, and the ability to write based on analysis was still not good. Both of the studies as conducted by [Ningsih \(2015\)](#) and [Nurmahani \(2016\)](#) found that the errors or mistakes that many students made were in the aspect of English grammar.

In different study, [Suharyono \(2018\)](#) used the Toulmin argument model in the Claim and Support strategy in student critical thinking. The results of this study indicated that the Toulmin Argument Model in the "Claim and Support" strategy was not proven to be effective in increasing students' critical thinking skills in writing argumentation essays. Accordingly, the researcher concludes that in writing argumentation paragraphs the students have to deal with the main problems such as limited ideas and poor grammar. Therefore, the research to be carried out was considered important because it related to the ability of students to write argumentative essays. The purpose of this research was to analyze the students' critical thinking in making argumentative essay using Stephen Toulmin's Theory. Based on the background, the research question formulated in order to meet the research objective in this study is "How are students' critical thinking patterns in writing argumentative essay?". Besides, the purpose of this study was to qualitatively analyze the thinking patterns of students in writing argument essay in higher education.

## Method

The research study used a qualitative research method with the instrument that was students' writing. The fourth semester students of the English Education Department of Makassar Muhammadiyah University on academic writing class were selected purposively. This purposive sampling is one of the sampling techniques is mostly used in qualitative study ([Sugiyono, 2014](#)). Then, to be the scope of this study, the researchers limited the six essays of students majoring in English Education from the same class to find out critical thinking patterns that would be analyzed in these writings. The data from this study refer to the theory of Stephen Toulmin consisted of six elements. The first is a claim or statement from the argumentative paragraph, the second is data or facts, the third is a warrant or guarantee where in other terms is evidence, the fourth is backing or supporting explanation, the fifth is a modifier or description of modality, and sixth is rebuttal or exception or rebuttal to the argument. The subjects of this research were only given one topic to be discussed on their writings. It was done to see how the subjects developed one single idea on their essays. The discussion of more than one topic is not acceptable in writing paragraphs ([Wali & Abdul, 2020](#)). In this research, there are two techniques used, namely observation and documentation. The data were obtained through observations then it was investigated through the technique of [Miles et.al \(2014\)](#) in which the collected data were classified, displayed, and eventually verified. In particular, several stages have been arranged in

analyzing the data namely: (1) Classification of data, (2) data reduction, (3) data display, (4) data interpretation, (5) data validation, and (6) reports.

## Results

The researchers analyzed the data from six students of fourth semester English major who followed academic writing classes. The six writings were then analyzed based on the existence of Toulmin's argumentative elements on their writings. The result of the data analysis showed that most of the students' writing employed claim, warrant and backing systematically on their writings. The result of the data analysis can be illustrated on the following table 1:

Table 1. Table of the data analysis result

Data	Claim	Warrant	Data	Backing	Qualifier	Rebuttal
<b>Data 1</b> (Irreplaceable Teacher)	Available	Available	Available	Available	Not available	Available
<b>Data 2</b> (Technology and Teacher's Role Nowadays)	Available	Not available	Available	Available	Available	Available
<b>Data 3</b> (The teacher's Role in Adjusting to Technological Developments)	Available	Available	Available	Available	Not available	Not available
<b>Data 4</b> (Teacher Collaboration and Technology in Education)	Available	Available	Available	Available	Available	Not available
<b>Data 5</b> (Teacher should Use Technology in Teaching)	Available	Available	Available	Available	Not available	Available
<b>Data 6</b> (The Role of the Teacher will not be Replaced by Technological Progress)	Available	Available	Available	Available	Available	Available

## Discussion

From the six data analyzed, the researcher found that all of these writings used the argumentative elements that Toulmin had put forward. There were some writings that didn't have qualifiers or modalities (data 1 and 5), ground and warrant (data 2), rebuttal (data 4) and one writing which didn't have rebuttal and qualifiers (data 3). However, the researcher also found one article that included the six elements of Toulmin's argumentative (data 6).

### DATA 1

As previously stated, there were two writings that contained claims, ground, warrant, backing and rebuttal, but didn't have qualifiers or modalities (data 1 and 5). Qualifier or modality is one of Toulmin's argumentative elements that can strengthen the writer's argument in his writing because qualifier gives an idea of how confident the writer is in his writing. In data 1, the researcher tried to provide alternative qualifiers or modalities, namely

*"of course by technology educators can broadly access their needs to support their learning process".*

This sentence assumed that certain needs of educators can be accessed widely by using technology.

## DATA 2

In the next data, the writing included claims, ground, backing, rebuttal and qualifier. However, researchers did not find any element of warrants in the writing. Warrant or guarantee which is the link between the claim and ground. The existence of warrant is also a guarantee that the statement in ground is true, it makes the warrant strengthen the ground. Therefore, the researcher predicts the sentence that can be referred to as a warrant, namely

*"most educational institutions in Indonesia rely on the use of technology to ensure the success of the learning process".*

This sentence assumes that in fact we currently use technology that is very useful to support learning, this is evident in the increasing number of schools in urban areas that already have adequate technological facilities.

## DATA 3

The next data is data which didn't have qualifiers and rebuttal (data 3). The writing in data 3 only covers the four elements of Toulmin's argumentative, namely claim, ground, warrant and backing. Qualifier or modality is an important element in Toulmin argumentative writing. The qualifier describes how much confidence the writer has in his argument and is also a statement in the form of attitude, style and tone of argument that aims to influence the reader (Abduh: 2019). The researcher revised the existing sentence in the writing from data 3 which can be referred to as a qualifier, namely:

*"As an educator, of course the teacher does not only have to be good at making decisions, but also must be creative and can be a good example for their students. Because teachers are the printers of the nation's generation. "*

This sentence implied that the task of a teacher was not as simple as people think, but teachers were required to be creative and can be emulated by the younger generation. Rebuttal or was also an element of Toulmin argumentative writing. Rebuttal is a statement that denies the writer's claim which if raised will strengthen the author's argument (Abduh: 2019). The researcher revised the student's writing on data 3 which could be referred to as rebuttal, namely:

*"Although mastery of technology has become a necessity for a teacher, there are still some teachers who think that this is an obstacle for them. It is because they still find it difficult to adapt to this condition, so they cannot teach optimally. "*

## DATA 4

In the next data, the writing included claim, ground, warrant, backing and qualifier. However, researchers did not find any rebuttal in it. Rebuttal is a statement that denies or refutes the author's statement on the claim. However, the existence of rebuttal can actually strengthen the writer's argument. The writing on this data discusses collaboration between teachers and technological advances in the world of education. This paper also implied that in fact nowadays almost all students could easily access the internet to obtain information related to what they are learning. The writer of data 4 assumed that all students who were in school have easy access or sophisticated and adequate information technology facilities. However, the writer didn't remember that on the other hand there were also a handful of students who had a weak economy. This condition forced their parents to work harder to earn income, and some of them were even desperate to steal for the smooth running of their child's online school. The researcher predicted that the condition can be used as a rebuttal or rebuttal in the writing of data 4. Therefore, the possible rebuttal in this writing is:

*"However, there are still some unfortunate people who have to work very hard to buy a cellphone or laptop. This is also should become one of concern to the government for the smooth running of their educational process "*

## DATA 5

The writing from the fifth data included claim, ground, backing, warrant and rebuttal. But the researcher didn't find qualifier on this writing. As the researcher had mentioned before that qualifier showed the degree of certainty of the writer in delivering their argument. Qualifier also able to limit the discussion of writing so the whole paragraphs are focusing only in one topic. This writing indicates that the writer was in her position to state that utilizing technology was becoming a must for teachers. She claimed that teachers must understand and know how to operate the available technology. This writing also provided the negative effect of using technology for students, that makes the students tend to less interaction with others. Because there was no qualifier in this writing, it makes the degree of probability in this writing is low. In the other side the writer has a strong data which supports the backing, that is the data that the writer took from ECR or Educator Confidence Report which is taken in 2018. This data indicated that more than fifty percent of teachers were getting more

confidence in teaching if they are able to operate the technology. From the explanation above the possible qualifier is:

*"the use of technology is absolutely improving the teacher performance in the learning process".* This statement ensures that the existing of technology is successfully help teachers in educational institution.

From the 1<sup>st</sup> to the 6<sup>th</sup> data, the researcher found that most of the students' writing contained warrant, except writing from data 2. Warrant was one of the elements which functioned as bridge to connect claim and ground. Warrant also could strengthen the position of the writer's claim by providing evidence, either statistical or the writer's judgement relates to the claim.

Furthermore, all of the six essays utilize backing to support the data given. It means that the writers take into consideration the existence of backing to defend the argument of their writing. Most of the writers give an additional statement as the backing related to the condition of the education in our country nowadays. Then, the other elements (qualifier and rebuttal) were rarely used to build the writers opinion. Both of the elements were connecting each other and required to limit the discussion and also anticipate the counter argument which potentially could weaken the writers' argument.

## Conclusion

After analyzing the data obtained from students' argumentative writings or essays, the researcher concluded that with Stephen Toulmin's argumentative theory, students could hone their ability to think critically, this could be proven by these following points:

1. All data are able to provide ground in their writing, this illustrates that in writing argumentative essays using Stephen Toulmin Theory, students are able to account for the claims they have made by directly answering and providing reasons why these claims arise.
2. All data provide evidence in the form of reasoning and statistical data which proves that in writing argumentations students are aware of the importance of a credible source of information so that it can support their arguments.
3. All data present conclusions through a reasoning process derived from the writer's statement contained in the claim, supported by the ground, connected by the warrant, so that the author can make conclusions that are sustainable with the warrant.

Despite some important points of the findings, there is still limitation found in this research that is in terms of the topic where the writings only focused on one topic given which results similar statements of the students on their writing. Thus, the researchers hope that this limitation can be the basic consideration for further researchers in conducting the same field of study.

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